

ARI Contractor Report 97-24

Integrating Database Software

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13. ABSTRACT (Maximum 200 words) This report contains the final version of the Integrated Database (IDB) in Microsoft Access format. The report briefly describes the system architecture, the developmental environment, hardware requirements, supporting software requirements, and installation/assembly instructions. The document also includes operating instructions with step-by-step procedures and examples.				
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INTEGRATING DATABASE SOFTWARE

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INTEGRATING DATABASE SOFTWARE

FINAL VERSION OF THE INTEGRATED DATABASE IN MICROSOFT ACCESS FORMAT

This Contractor Report contains the final version of the Integrated Database (IDB) in digital form. The IDB software consists of one file (IDB.MDB) which has been compressed using the industry standard PKZIP program onto file IDB.ZIP. The total size of IDB.MDB is 3,571,712 bytes; file IDB.ZIP contains 654,405 bytes.

DESCRIPTION OF SYSTEM ARCHITECTURE

As currently implemented, the physical database file resides on a file server (POM2) which is part of the CTC Archive computer system. POM2 is part of a three-server configuration which uses Novell 4.1 network software.

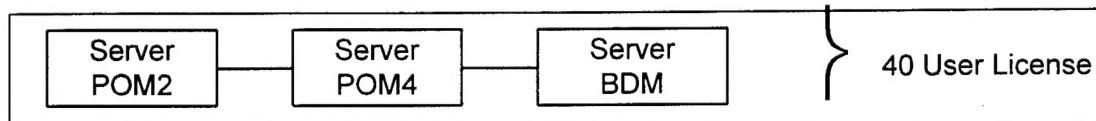


Figure 1. CTC Archive Legacy Network

The database is currently accessed on a network workstation (Pentium 90 Mhz) using a local copy of Microsoft Access running under Windows for Workgroups 3.11.

The configuration may be set up in any number of ways, including maintenance on a standalone PC.

DESCRIPTION OF DEVELOPMENTAL ENVIRONMENT

The development environment consisted of a UPAS workstation and a Development workstation, both connected to a Novell 4.1 Network as shown in Figure 1. The UPAS data conversion process depended upon the UPAS Workstation for two reasons:

- Availability of a tape drive to transfer (from tape to disk) the UPAS data files
- Availability of the XDB software which allows conversion of the UPAS data TABLES

The respective roles of the UPAS workstation, the network, and the development workstation in processing UPAS data are shown below.

Process	UPAS WS Role	Network Role	Dev. WS Role
Unarchiving UPAS Data	Tape Drive, Software, storage		
Converting UPAS Data	XDB Software, storage	Storage of converted Tables	
Importing Tables into Access		Storage	MS Access Software
Standardization		Storage	MS Access Software

DESCRIPTION OF HARDWARE REQUIREMENTS

The minimum hardware requirements are listed in the table below:

Component	Minimum Requirement
Processor	486/66
RAM	8 MB
Hard Disk Capacity	50MB
Monitor	VGA
Mouse	Required

The information above will fully support the prototype IDB, as the size of the database is currently about 3.5MB. It is estimated that each additional UPAS exercise will require between 2 and 5 megabytes of hard disk space, so if all available exercises are loaded, the total hard disk space required for data on hand would be between 100 and 200 megabytes.

DESCRIPTION OF SUPPORTING SOFTWARE REQUIREMENTS

The only supporting software packages required for preparation, loading, and maintenance of the IDB were

- the tape backup/restore software which was pre-loaded on the UPAS Workstation,
- the XDB software which was loaded on the UPAS Workstation,
- Microsoft Access® which requires Microsoft Windows 3.1 or Windows for Workgroups 3.11,
- PKZIP/PKUNZIP used to compress/ uncompress computer files

It is anticipated that the routine operation and maintenance of the IDB will require the same set of software.

INSTALLATION/ ASSEMBLY INSTRUCTIONS

The following command **PKUNZIP A:\IDB [C:\DEST]**, when run from the DOS prompt, will unZIP the file from the diskette and place it in the destination directory on a hard drive. Program PKUNZIP must be in the search path for the target computer. Replace the string [C:\DEST] with the appropriate drive and directory for the target system.

Microsoft Access, version 2.0 (or later) must be installed in order to use the IDB. Refer to package installation instructions.

OPERATING INSTRUCTIONS

To start the IDB, first start access by double-clicking on the Microsoft Access icon, which will be either in a Microsoft Office program group, as shown below or in a separate Access Group. The Microsoft Access icon is circled in Figure 2.

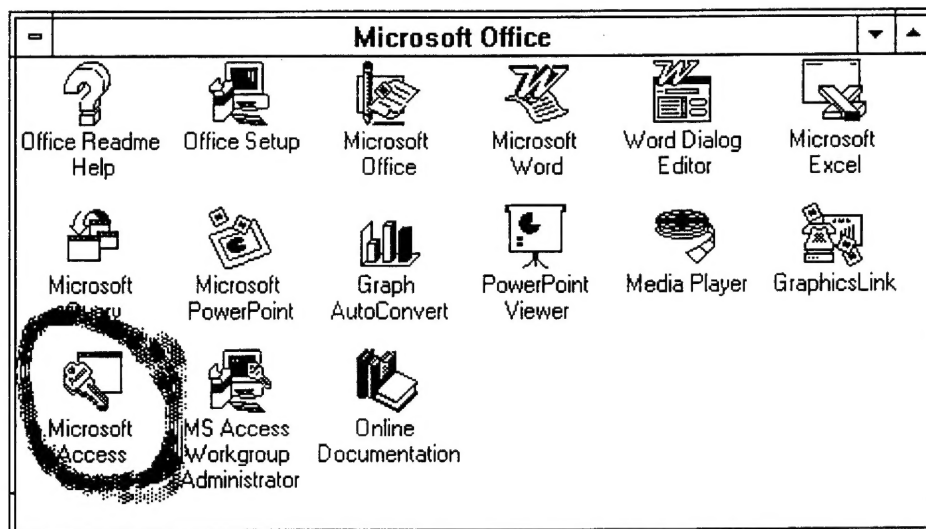


Figure 2. MS Office Group

After MS Access is running, the IDB is opened by clicking File on the Menu bar, Open Database... on the submenu, then selecting the IDB.MDB file. Once the database has been opened, the user may manipulate the tables in many ways.

The IDB is fully relational in that any field in any table may be related to one or more fields in any other table. A description of the tables in the IDB is included as Appendix A to this document. Within the Access® environment, analysis products may be produced from the database in two similar methods.

One method uses the MS-Access® Query Builder to produce results directly from one or more tables. Two examples of queries are included below. The second method uses a query in conjunction with a report built with the MS-Access® report writer. The basis for retrieving the data is the same in both cases - Structured Query Language (SQL) code created by the Query Builder. An example of Query Builder use is shown below.

A query may be formulated which asks for specific information from one or more tables, based on conditions which are a part of the query. As a simple example, the following query asks for the unit designation and score for all units which have a unit designation (Not B8X.UNIT="blank") and scored a perfect 1000 (B8X.FSCORE=1000) on the Bradley Table 8.

```
SELECT DISTINCTROW B8X.UNIT, B8X.FSCORE
FROM B8X
WHERE ((Not B8X.UNIT="blank") AND (B8X.FSCORE=1000));
```


The results yield 44 rows, as shown in Table 1 on this page. This is an example of a single-table query.

The relational nature of the database appears only when more than 1 table is used in a query. The query below uses both table B8X and B8GX to return the date of the run and the ranks of the driver and gunner for scores of 1000.

```
SELECT DISTINCTROW B8X.UNIT, B8X.DATE,
B8X.FSCORE, B8GX.GRNK, B8GX.DRNK
FROM B8X INNER JOIN B8GX ON (B8X.DATE =
B8GX.DDATE) AND (B8X.UNIT = B8GX.UNIT)
WHERE ((B8X.UNIT<>"blank") AND
(B8X.FSCORE=1000))
ORDER BY B8X.DATE;
```

An abbreviated sample of the output from the second query is shown as Table 2 below.

Table 2. Multiple-Table Query

1AD/2/312/D/1	23-Sep-94	1000	E4	E3
1AD/2/312/D/1	23-Sep-94	1000	E3	E4
1AD/2/312/D/3	24-Sep-94	1000	E5	E3
1AD/2/312/A/5	24-Sep-94	1000	E6	E4
1AD/2/312/B/3	28-Sep-94	1000	E4	E3
1AD/2/312/H/5	29-Sep-94	1000	E5	E4
1AD/2/312/B/5	29-Sep-94	1000	E4	E3

Both queries presented above were formulated using the Query Builder, which allows the database user to create sophisticated queries without having to write SQL. Figures 3, 4 and 5 illustrate the use of the Query Builder.

Figure 3 shows the initial screen encountered when the Query Builder is started. It asks the user to specify which table(s) will be used in the query. The user may select desired tables one by one, or mark multiple tables as shown on the figure. When the user is satisfied with the table selection, the "Add Table" dialog box may be closed.

Table 1. Single-Table Query

UNIT	FSCORE
1AD/4/11/B/1	1000
1AD/4/11/B/1	1000
1AD/4/11/B/3	1000
1AD/4/11/B/3	1000
1AD/4/11/C/1	1000
1AD/2/312/A/1	1000
1AD/2/312/A/3	1000
1AD/2/312/A/5	1000
1AD/2/312/B/3	1000
1AD/2/312/B/5	1000
1AD/2/312/D/1	1000
1AD/2/312/D/3	1000
1AD/2/312/H/5	1000
1AD/2/412/A/2	1000
1AD/2/412/B/2	1000
1AD/2/412/B/3	1000
1AD/2/412/C/3	1000
1AD/2/412/D/2	1000
3ID/1/115/A/1	1000
3ID/1/115/A/1	1000
3ID/1/115/A/2	1000
3ID/1/115/A/2	1000
3ID/1/115/D/1	1000
3ID/1/115/D/1	1000
3ID/1/115/D/3	1000
3ID/1/115/D/5	1000
3ID/1/115/H/5	1000
3ID/3/16/A/2	1000
3ID/1/215/A/3	1000
3ID/1/215/B/1	1000
3ID/1/215/B/5	1000
3ID/1/215/C/3	1000
3ID/1/215/H/5	1000
3ID/4/34/A/3	1000
3ID/4/34/A/3	1000
3ID/4/34/H/5	1000
1AD/2/412/A/2	1000
1AD/2/412/B/2	1000
1AD/2/412/B/3	1000
1AD/2/412/C/3	1000
1AD/2/412/D/2	1000
3ID/4/43/A/1	1000
3ID/4/43/A/2	1000

The screen then looks like Figure 4, with the tables and their fields shown on the top part of the screen. The user next specifies the relationships between/among the tables selected. This is done simply by selecting (clicking on) a field in one table, and dragging it to the related field in another table. A line is drawn between related records in the different tables. In the example, we can see that the UNIT field in the B8X table is related to the UNIT field in the B8GX table. It is not necessary that fields have the same, or even similar names; what is important is the type and format of the data within the fields. A second line shows the relationship between DDATE in table B8X and a field off the screen in table B8GX. This connects the date fields in the two tables. The next step is the specification of the field(s) which will either be displayed in the output or used in the logic. This is done by clicking on a field name in either table, and dragging it down to the Field line in the matrix below. Figure 5 shows that we have select UNIT, DDATE, SCORE and BRNK. An X in the Show line signifies that the field will be displayed on the output (or sent to the report), and is set by clicking on the box. Finally, the criteria which will be used to access the database are entered on the Criteria line below the field to which the criteria apply. For the example, we see that in the criteria row for BRNK, we have **Like "O?"**, which means that any rank which has O for the first character and any characters subsequently (? is a wild card) will meet the criteria. Likewise, the criteria row for FSCORE reads **> 950** signifying that any FSCORE greater than 950 will match the criteria. Putting the criteria together, we are looking for officers who scored over 950. As we are building the query as described above, Access® is building the SQL code which will actually be applied to the database. It is show below:

```
SELECT DISTINCTROW B8GX.UNIT, B8GX.DDATE, B8X.FSCORE, B8GX.BRNK
FROM B8GX INNER JOIN B8X ON (B8GX.DDATE = B8X.DDATE) AND (B8GX.UNIT =
B8X.UNIT) WHERE ((B8X.FSCORE>950) AND (B8GX.BRNK Like "O?"));
```

This is the query used as the basis for the report shown in Table 3 on page 8.

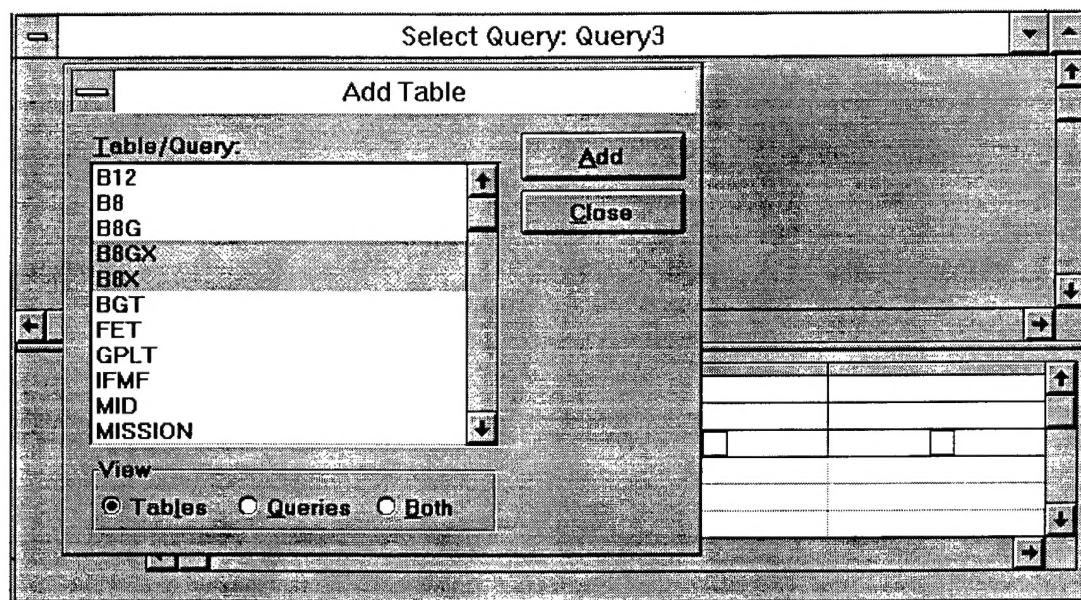


Figure 3. Initial Query Builder Screen

Select Query: Query3

B8GX		B8X	
*		*	
UNIT		UNIT	
RNGE		QUARTER	
DDATE		COR	
DSTRT		DIV	
DSTOP		BDE	

Field				
Sort				
Show	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Criteria				
or				

Figure 4. Second Query Builder Screen

Select Query: Query2

B8GX		B8X	
*		*	
UNIT		UNIT	
RNGE		QUARTER	
DDATE		COR	
DSTRT		DIV	
DSTOP		BDE	

Field	UNIT	DDATE	FSCORE	BRNK
Sort				
Show	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Criteria			>950	Like "O?"
or				

Figure 5. Third Query Builder Screen

The second way to produce analysis results is by means of an Access® report. A report is similar to a query in that a query is always the report's basis. The advantage of a report is the expanded formatting capabilities which are available. The query underlying a report may be as simple or as complicated as the analyst desires. The output below uses the two-table query demonstrated above to return the scores of officer-commanders with Bradley Table 8 scores over 950.

Queries can answer simple or straightforward questions directly. More complex questions involving advanced statistical methods will require initial queries, the output of which will be exported to a format compatible with more robust statistical packages, such as SPSS.

Table 3. Two-Table Access® Report

Officer Performance

03-Apr-96

UNIT	DDATE	FSCORE	BRNK
1AD/2/312/D/1	9/23/94	1000	O2
1AD/2/312/D/3	9/23/94	995	O1
1AD/2/312/A/5	9/24/94	1000	O3
1AD/2/312/C/5	9/29/94	990	O3
1AD/2/312/B/5	9/29/94	1000	O2
1AD/2/312/H/5	9/29/94	1000	O4
1AD/2/312/C/5	9/30/94	964	O2
1AD/2/412/C/1	10/7/94	962	O2
1AD/2/412/C/1	10/7/94	963	O2
1AD/2/412/C/1	10/7/94	963	O2
1AD/2/412/C/1	10/7/94	962	O2
1AD/2/412/D/2	10/12/94	1000	O1
1AD/2/412/D/2	10/12/94	1000	O1
1AD/4/11/C/1	10/21/94	1000	O2
1AD/4/11/A/1	10/25/94	977	O2
1AD/4/11/B/3	10/27/94	1000	O2
1AD/4/11/B/3	10/27/94	1000	O2
1AD/4/11/B/1	10/27/94	1000	O2
1AD/4/11/B/1	10/27/94	1000	O2

APPENDIX A

IDB TABLE LAYOUTS

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Appendix A - Table Layouts
Gunnery Tables

Summary

Appendix A contains the layouts for the Microsoft Access® IDB Database. It is presented in three sections representing the three sources of data.

Section 1 contains the table layouts for the 7th ATC gunnery data:

Table Name	Definition
B12	Bradley Gunnery Table XII
B8GX	Bradley Gunnery Table VIII - Participants
B8X	Bradley Gunnery Table VIII
BGT	Precision Gunnery Table - Bradley
PGT	Precision Gunnery Table - Tank
T12	Tank Gunnery Table XII
T8G	Tank Gunnery Table VIII - Participants
T8X	Tank Gunnery Table VIII
TOW-95	TOW Gunnery Table

Section 2 contains the table layouts for the 7th ATC UCFT data:

Table Name	Definition
UCFT_MASTER	UCFT Control Table
UCFT_DATA	UCFT Performance Data Table

Section 3 contains the UPAS exercise tables:

Table Name	Definition
FET	Firing Event Table
GPLT	Ground Position-Location Table
IFMF	Indirect Fire Mission Table
MID	Mission Identification Table
MISSION	Mission Description Table
MOP	Measures of Performance Table
PERFORM	Performance Tracking Table
PET	Pairing Event Table
PLTORG	Platoon Organization Table
PSIT	Player State Initialization Table
PSUT	Player State Update Table
PVWT	Player/Vehicle Weapon Table
TASK	Task Description Table
TEXT	MOP Summary Table
USIT	Unit State Update Table

Appendix A - Table Layouts
Gunnery Tables

7th ATC Gunnery Table Data

Table: B12
Source: Gunnery Tables
Records: 59

Name	Type	Size
UNIT	Text	12
FY	Number (Double	8
QUARTER	Number (Byte)	1
PLSCR	Text	1
NUNQ	Number (Double	8
NQLF	Number (Double	8
NSPR	Number (Double	8
NDST	Number (Double	8
DTLSCR	Number (Double	8
DTLPRE	Number (Double	8
DMGSCR	Number (Double	8
DMGPRE	Number (Double	8
DTPSCR	Number (Double	8
DTPPRE	Number (Double	8
NTLSCR	Number (Double	8
NTLPRE	Number (Double	8
NMGSCR	Number (Double	8
NMGPRE	Number (Double	8
NTPSCR	Number (Double	8
NTPPRE	Number (Double	8
TLSCR	Number (Double	8
TLPRE	Number (Double	8
MGSCR	Number (Double	8
MGPRE	Number (Double	8
TPSCR	Number (Double	8
TPPRE	Number (Double	8

Appendix A - Table Layouts
Gunnery Tables

Table: B8GX
Source: Gunnery Tables
Records: 138

Name	Type	Size
UNIT	Text	15
RNGE	Text	3
DDATE	Date/Time	8
DSTRT	Text	4
DSTOP	Text	4
DTAS	Number (Double	8
BSSN	Text	9
BRNK	Text	2
BNME	Text	3
BPOS	Number (Double	8
GSSN	Text	9
GRNK	Text	2
GNME	Text	3
GPOS	Number (Double	8
DSSN	Text	9
DRNK	Text	2
DNME	Text	3
DPOS	Number (Double	8
DEV	Text	3
NDATE	Date/Time	8
NSTRT	Text	4
NSTOP	Text	4
NTAS	Number (Double	8
NEV	Text	3
DWTHR1	Number (Double	8
DWTHR2	Number (Double	8
NWTHR1	Number (Double	8
NWTHR2	Number (Double	8
DTEMP	Number (Double	8
NTEMP	Number (Double	8
DVIS	Number (Double	8
NVIS	Number (Double	8
DTOW	Number (Double	8
NTOW	Number (Double	8
TYPE	Text	4
BUM	Text	3
PL	Text	1
CO	Text	1
BN	Text	3
BDE	Text	1
DIV	Text	5
COR	Text	1
STABLE	Number (Double	8

Appendix A - Table Layouts
Gunnery Tables

Table: B8X
Source: Gunnery Tables
Records: 367

Name	Type	Size
UNIT	Text	15
QUARTER	Number (Byte)	1
COR	Text	1
DIV	Text	5
BDE	Text	1
BN	Text	3
CO	Text	1
PL	Text	1
BUM	Text	3
FY	Number (Double	8
BSCORE	Number (Double	8
BSTM	Number (Double	8
BSTC	Number (Double	8
BETM	Number (Double	8
BETC	Number (Double	8
BKTM	Number (Double	8
BKTC	Number (Double	8
BHITM	Number (Double	8
BHITC	Number (Double	8
B3BT	Number (Double	8
FSCORE	Number (Double	8
FSTM	Number (Double	8
FSTC	Number (Double	8
FETM	Number (Double	8
FETC	Number (Double	8
FKTM	Number (Double	8
FKTC	Number (Double	8
FHITM	Number (Double	8
FHITC	Number (Double	8
F3BT	Number (Double	8
DATE	Date/Time	8
QUAL	Text	1
STABLE	Number (Double	8

Appendix A - Table Layouts
Gunnery Tables

Table: BGT
Source: Gunnery Tables
Records: 357

Name	Type	Size
UNIT	Text	5
DATE	Text	8
CNT	Number (Double	8
EX	Text	6
IT	Text	1
TIME	Text	4
VOPN_AVG	Number (Double	8
TOPN_AVG	Number (Double	8
OPNTMAVG	Number (Double	8
VKIL_AVG	Number (Double	8
TKIL_AVG	Number (Double	8
KILTMVG	Number (Double	8
VEH XKILL	Number (Double	8
TRP XKILL	Number (Double	8
XKILL	Number (Double	8
EVPRES	Number (Double	8
EVKILL	Number (Double	8
EVEH_PER	Number (Double	8
TPRES	Number (Double	8
TKILL	Number (Double	8
TKIL_PER	Number (Double	8
FRNDPRES	Number (Double	8
FRATS	Number (Double	8
FRAT_PER	Number (Double	8
NBC	Number (Double	8
DEGRADED	Number (Double	8
SCORE	Number (Double	8
QUAL	Text	1

Appendix A - Table Layouts
Gunnery Tables

Table: PGT
Source: Gunnery Tables
Records: 511

Name	Type	Size
UNIT	Text	5
DATE	Text	8
CNT	Number (Double	8
EX	Text	6
IT	Text	1
TIME	Text	4
VOPN_AVG	Number (Double	8
TOPN_AVG	Number (Double	8
OPNTMAVG	Number (Double	8
VKIL_AVG	Number (Double	8
TKIL_AVG	Number (Double	8
KILTMVG	Number (Double	8
VEH XKILL	Number (Double	8
TRP XKILL	Number (Double	8
XKILL	Number (Double	8
EVPRES	Number (Double	8
EVKILL	Number (Double	8
EVEH_PER	Number (Double	8
TPRES	Number (Double	8
TKILL	Number (Double	8
TKIL_PER	Number (Double	8
FRNDPRES	Number (Double	8
FRATS	Number (Double	8
FRAT_PER	Number (Double	8
NBC	Number (Double	8
DEGRADED	Number (Double	8
SCORE	Number (Double	8
QUAL	Text	1

Appendix A - Table Layouts
Gunnery Tables

Table: T12
Source: Gunnery Tables
Records: 77

Name	Type	Size
UNIT	Text	12
FY	Number (Double	8
QUARTER	Number (Byte)	1
PLSCR	Text	1
NUNQ	Number (Double	8
NQLF	Number (Double	8
NSPR	Number (Double	8
NDST	Number (Double	8
DTLSCR	Number (Double	8
DTLPRE	Number (Double	8
DMGSCR	Number (Double	8
DMGPRE	Number (Double	8
DTPPRE	Number (Double	8
DAMMO	Number (Double	8
NTLSCR	Number (Double	8
NTLPRE	Number (Double	8
NMGSCR	Number (Double	8
NMGPRE	Number (Double	8
NTPPRE	Number (Double	8
NAMMO	Number (Double	8
TLSCR	Number (Double	8
TLPRE	Number (Double	8
MGSCR	Number (Double	8
MGPPE	Number (Double	8
TPPRE	Number (Double	8
TAMMO	Number (Double	8

Appendix A - Table Layouts
Gunnery Tables

Table: T8G
Source: Gunnery Tables
Records: 186

Name	Type	Size
DDTE	Date/Time	8
DSTRT	Text	4
DSTOP	Text	4
TSSN	Text	9
TRNK	Text	2
TNME	Text	3
TPOS	Number (Double	8
GSSN	Text	9
GRNK	Text	2
GNME	Text	3
GPOS	Number (Double	8
LSSN	Text	9
LRNK	Text	2
LNME	Text	3
LPOS	Number (Double	8
DSSN	Text	9
DRNK	Text	2
DNME	Text	3
DPOS	Number (Double	8
DEV	Text	3
DRNG	Text	3
NDTE	Date/Time	8
NSTRT	Text	4
NSTOP	Text	4
NEV	Text	3
NRNG	Text	3
UNITA	Text	10
UNITB	Text	5
TNK	Number (Double	8
WET1	Number (Double	8
WET2	Number (Double	8
WET3	Number (Double	8
WET4	Number (Double	8
TEMP	Number (Double	8
TEMP1	Number (Double	8
DVIS	Number (Double	8
NVIS	Number (Double	8
STABLE	Number (Double	8

Appendix A - Table Layouts
Gunnery Tables

Table: T8X
Source: Gunnery Tables
Records: 348

Name	Type	Size
UNIT	Type	12
FY	Number (Double	8
QUARTER	Number (Byte)	1
BFRH	Number (Double	8
BRNDS	Number (Double	8
BSCORE	Number (Double	8
BOTIME	Number (Double	8
BTME	Number (Double	8
BHITS	Number (Double	8
BMGHITS	Number (Double	8
BMGTME	Number (Double	8
BA3OT	Number (Double	8
BA3SCR	Number (Double	8
FFRH	Number (Double	8
FRNDS	Number (Double	8
FSCORE	Number (Double	8
FOTIME	Number (Double	8
FTME	Number (Double	8
FHITS	Number (Double	8
FMGHITS	Number (Double	8
FMGTME	Number (Double	8
FA3OT	Number (Double	8
FA3SCR	Number (Double	8
DATE	Date/Time	8
QUAL	Text	1
STABLE	Number (Double	8

Appendix A - Table Layouts
Gunnery Tables

Table: TOW-95
Source: Gunnery Tables
Records: 112

Name	Type	Size
COR	Number (Double	8
DIV	Text	5
BAT	Text	5
CO	Text	1
SN	Number (Double	8
POST	Number (Double	8
MOUNT	Number (Double	8
DATE	Date/Time	8
FY	Number (Double	8
EXP	Number (Double	8
WTH	Number (Double	8
TEMP	Number (Double	8
LIGHT	Number (Double	8
TYP	Number (Double	8
RNG	Number (Double	8
HIT	Number (Double	8
CAUSE	Number (Double	8
ALT	Number (Double	8
SPD	Number (Double	8
LOT	Text	8

7th ATC UCFT Data

Table: UCFT_Master
Source: Listings of UCFT Results
Records: 0

Name	Type	Size
Vehicle_ID	Text	10
Program_Code	Number (Intege	2
Commander	Text	20
Gunner	Text	20
Crew_Pres_Target_Acq	Number (Intege	2
Crew_Exp_Target_Acq	Number (Intege	2
Crew_Pres_Reticle_Aim	Number (Intege	2
Crew_Exp_reticle_Aim	Number (Intege	2
Crew_Pres_System_Mst	Number (Intege	2
Crew_Exp_System_Mst	Number (Intege	2
Crew_Status_Cd	Number (Intege	2
Crew_Progress_Cd	Number (Intege	2
Crew_Exercises	Number (Intege	2
Cmdr_Pres_Target_Acq	Number (Intege	2
Cmdr_Exp_Target_Acq	Number (Intege	2
Cmdr_Pres_Reticle_Aim	Number (Intege	2
Cmdr_Exp_reticle_Aim	Number (Intege	2
Cmdr_Pres_System_Mst	Number (Intege	2
Cmdr_Exp_System_Mst	Number (Intege	2
Cmdr_Status_Cd	Number (Intege	2

Appendix A - Table Layouts

UCOFT Data

Cmdr_Progress_Cd	Number (Intege	2
Cmdr_Exercises	Number (Intege	2

Table: UCOFT_Records
Source: Listings of UCOFT Results
Records: 0

Name	Type	Size
Vehicle_ID	Text	10
Program_Code	Number (Intege	2
Commander	Text	20
Gunner	Text	20
Date	Date/Time	8
Exercise	Text	6
Test_Acq	Text	6
Reticle_Aim	Text	6
System_Mst	Text	6
Instructor	Text	24

UPAS Data

Table: FET
Source: UPAS Data
Records: 6611

Name	Type	Size
TTIME	Text	8
PID	Text	11
LPN	Text	17
WPN	Text	8
X	Text	7
Y	Text	7
AMMO	Text	8
NROUNDS	Number (Double	8
EVENT_NO	Number (Double	8

Table: GPLT
Source: UPAS Data
Records: 4028

Name	Type	Size
TTIME	Text	8
PLPID	Text	11
PLLPN	Text	17
X	Text	7
Y	Text	7
Z	Number (Double	8
REL_X	Number (Double	8
REL_Y	Number (Double	8

Appendix A - Table Layouts
UPAS Data

VSPEED	Text	4
VDIR	Text	6
GELEV	Text	6
TAZM	Text	6
ESPEED	Text	5
DISTANCE	Text	4
AMMO	Text	5
FUEL	Text	5

Appendix A - Table Layouts
UPAS Data

Table: IFMF
Source: UPAS Data
Records: 412

Name	Type	Size
TTIME	Text	8
IFMISS	Text	6
IFFORCE	Text	1
IFBAT	Text	17
IFTARG	Text	6
IFTX	Text	7
IFTY	Text	7
IFWT	Text	8
IFST	Text	8
IFFT	Text	8
NROUNDS	Text	4

Table: MID
Source: UPAS Data
Records: 1

Name	Type	Size
MSTART	Text	8
MEND	Text	8
MHISTORY	Text	11
MSEGMENT	Text	4
MTYPE	Text	21
MORG	Text	21
MTF	Text	2

Table: MISSION
Source: UPAS Data
Records: 56

Name	Type	Size
M_NAME	Text	30
PHASE	Text	30
PRIORITYP	Number (Double	8
SUB_PHASE	Text	30
PRIORITYS	Number (Double	8
T_NAME	Text	50
T_NUMBER	Number (Double	8
PRIORITY	Number (Double	8

Appendix A - Table Layouts

UPAS Data

Table: MOP
Source: UPAS Data
Records: 155

Name	Type	Size
M_NAME	Text	30
T_NUMBER	Number (Double	8
P_INDEX	Number (Double	8
PRIORITY	Number (Double	8
MOP_KIND	Text	14
MOP_DSP_FO	Text	14
SQL_NAME	Text	40
MOP_STATEM	Text	200

Table: PERFORM
Source: UPAS Data
Records: 107

Name	Type	Size
M_NAME	Text	30
T_NUMBER	Number (Double	8
P_INDEX	Number (Double	8
PERFORMANC	Text	200

Table: PET
Source: UPAS Data
Records: 6903

Name	Type	Size
TTIME	Text	8
TPID	Text	11
TLPN	Text	17
RESULT	Text	1
FPID	Text	11
FLPN	Text	17
FWPN	Text	8
FAMMO	Text	8
FRAT	Text	1
TX	Text	7
TY	Text	7
FX	Text	7
FY	Text	7
RANGE	Number (Double	8
EVENT_NO	Number (Double	8
NROUNDS	Number (Double	8

Appendix A - Table Layouts
UPAS Data

Table: PLTORG
Source: UPAS Data
Records: 24

Name	Type	Size
COMPCODE	Text	3
PLTCODE	Text	1
ORGCODE	Text	6
PLLPN	Text	17
PTYPE	Text	1
COMPANY	Text	18
PLATOON	Text	18
SIDE	Text	1
PID	Text	11

Table: PSIT
Source: UPAS Data
Records: 281

Name	Type	Size
PID	Text	11
LPN	Text	17
SIDE	Text	1
INST	Text	1
PTYPE	Text	10
ORG	Text	80
TRACK	Text	1
PSTAT	Text	1

Table: PSUT
Source: UPAS Data
Records: 274

Name	Type	Size
TTIME	Text	8
PID	Text	11
LPN	Text	17
SIDE	Text	1
INST	Text	1
PTYPE	Text	8
ORG	Text	80
TRACK	Text	1
PSTAT	Text	2

Appendix A - Table Layouts
UPAS Data

Table: PVWT
Source: UPAS Data
Records: 206

Name	Type	Size
PSIDE	Text	1
PTYPE	Text	8
PVEH	Text	24
PMILES	Text	3
PWPN	Text	24
PAMMO	Text	8
COST	Text	8

Table: TASK
Source: UPAS Data
Records: 56

Name	Type	Size
M_NAME	Text	30
T_NUMBER	Number (Double	8
STANDARD	Text	200

Table: TEXT
Source: UPAS Data
Records: 199

Name	Type	Size
SQL_NAME	Text	40
FLD_NO	Number (Double	8
FLD_NAME	Text	20
T_TYPE	Text	1

Table: USIT
Source: UPAS Data
Records: 4

Name	Type	Size
UNIT	Text	80
LINU	Text	21
STAU	Text	21
UTYPE	Text	4
UFORCE	Text	1
UECH	Text	4